

A NEW *TACHIGALI* (FABACEAE:
CAESALIPINIOIDEAE)
FROM WESTERN AMAZONIA

JOHN J. PIPOLY III

Botanical Research Institute of Texas
509 Pecan Street
Fort Worth, TX 76102-4060, U.S.A.

RESUMEN

Se describe una nueva especie del género *Tachigali*, *T. vasquezii*, procedente de la cuenca amazónica colombiana y peruana. Se ilustra la especie y se discuten sus relaciones filogenéticas. Además, otras especies anteriormente clasificadas en el género *Sclerolobium*, que se encuentran en varias flóculas amazónicas actualmente en proceso de redacción, o con las que tienen parentesco, se transfieren al género *Tachigali*, resultando las nuevas combinaciones *Tachigali rugosa* (Martius) Zarucchi & Pipoly, *T. micropetala* (Ducke) Zarucchi & Pipoly, *Tachigali bracteosa* (Harms) Zarucchi & Pipoly. *Tachigali micropetala* y *T. bracteosa* son nuevas citas para Perú.

ABSTRACT

A new species of *Tachigali*, *T. vasquezii*, is described from the Amazon Basin of Peru and Colombia. The new species is illustrated and its phylogenetic relations are discussed. In addition, other species previously classified in the genus *Sclerolobium* now being treated in amazonian florulas in final preparation, or closely related to them, are transferred to *Tachigali*, resulting in the new combinations: *Tachigali rugosa* (Martius) Zarucchi and Pipoly, *T. micropetala* (Ducke) Zarucchi and Pipoly, and *T. bracteosa* (Harms) Zarucchi and Pipoly. The occurrence of *T. micropetala*, and *T. bracteosa* are new reports for Peru.

INTRODUCTION

Tachigali Aublet is a neotropical genus now considered to contain approximately 60 species, including the 35 species formerly included in *Sclerolobium* Vogel (Zarucchi & Herendeen 1993). Historically, the genera were distinguished by position of the pistil stipe with reference to the receptacle cup (*Sclerolobium*, centrally; *Tachigali*, eccentric) more than any other character (Dwyer 1954, 1957). However, Zarucchi and Herendeen indicate that there is a continuum in the stipe character and no other either morphological or anatomical character may successfully be used to separate the two groups. Both are frequently myrmecophilous, a trait otherwise rare in the Caesalpinioideae.

While carrying out a series of florulas in the western Amazon Basin of Peru and Colombia, a new taxon was discovered which is assigned to *Tachigali* and described herewith.

Tachigali vasquezii Pipoly, sp. nov. (Fig. 1)

Ob ramulos angulosos, laminas coriaceas ad apices acuminatos ad bases truncatos, stipulas bifoliolatas ovatas coriaceasque ad *T. rugosa* valde arcte affinis sed ab ea ramulis foliolisque subter chocolati (non aureo-) tomentosus, foliolis oblongis (non lanceolatis) desuper planis (nec bullatis), denique petiolulis teretibus (non subteretibus), 7–13 (nec 3–5) mm longis praeclare distat.

Emergent canopy tree to 30(–45) m tall, 57 cm DBH; branchlets subterete to 3–5-angled, bark brown and gray in alternating longitudinal bands, 0.8–1.2 cm diam., minutely chocolati-tomentellous, early glabrescent; pith large, soft; stipules foliaceous, bifoliolate, coriaceous, ovate, 1.8–3.5 cm long, 1.3–2.8 cm wide, apex acute, base asymmetric, truncate, midrib impressed above, prominently raised below, secondary veins 5–9 pairs, bullate and densely chocolati-tomentose and glandular along the midrib and secondary veins above, densely chocolati-tomentose below, the margin entire, revolute, glabrous. Leaves paripinnate, alternate, petiolate; petioles (5–)9–14(–27) cm long, 0.7–1.5 cm diam., pulvinate basally; rachis solid, subterete, with an adaxial furrow, without myrmecodomatia, densely and minutely chocolati-tomentellous, (14–)24–36(–47) cm long, apically mucronate, the mucron 1–2 mm long, caducous, eglandular; petiolules terete, (0.7–)0.9–1(–1.3) cm long, 2–3 mm diam., densely chocolati-tomentellous, the tomentum persistent; leaflets coriaceous, oblong, 12–18(–31) cm long, 5–7(–13) cm wide, apex abruptly acuminate, the acumen 0.5–1 cm long, base truncate, midrib impressed above, prominently raised below, densely tomentulose, secondary veins 14–20(–28) pairs, densely tomentellous and somewhat impressed above, prominently raised and tomentose below, submarginally loop-connected to the next distal secondary vein, tertiary veins somewhat impressed above, prominently raised below, nitid above, densely chocolati-tomentellous-velutinous below, the margin revolute, entire. Inflorescence an axillary panicle, 26–29 cm long, peduncle 6–9 cm long; pedicels 3–7 mm long. Flowers unknown. Fruit flat, oblong or rarely elliptic, 12.5–15 cm long, (3–)5–6.5 cm wide, apex rounded, base acute, testa reddish-coffeate, exfoliate at maturity, one-seeded.

TYPE. PERU. AMAZONAS: Valle del Río Santiago, 65 km N of Pinglo, Quebrada Caterpiza, 2–3 km behind Caterpiza, 200 m, 1 Feb 1980 (fr), *V. Huashikat 1910* (HOLOTYPE: MO; ISOTYPES: AMAZ, UC).

PARATYPES. COLOMBIA. AMAZONAS: Municipio Leticia, Parque Nacional Natural Amacayacu, Quebrada Agua Pudre, 1.5 km NE of Río Amacayacu mouth, MO Strategy Inventory site, tree No. 158, 03°47'S, 70°15'W, 200–220 m, 11 Nov 1991 (ster.), *J. Pipoly et al.* 15851 (BRIT, COL, FMB, MO). PERU. Huánuco: Prov. Pachitea; Codo de Pozuzo; alluvial floodplain of Río Pozuzo after it emerges from mountains, trail N of settlement to Río Mashoca, 75° 25'W, 9° 37'S, 500 m, 19 Oct 1982 (ster.), *R. Foster 9329* (F, USM). Loreto: Prov. Maynas, Distrito Iquitos, Allpahuayo, Estación Experimental del Instituto de Investigaciones de la Amazonía Peruana, 04°10'S, 73°30'W, 150–180 m, Dec

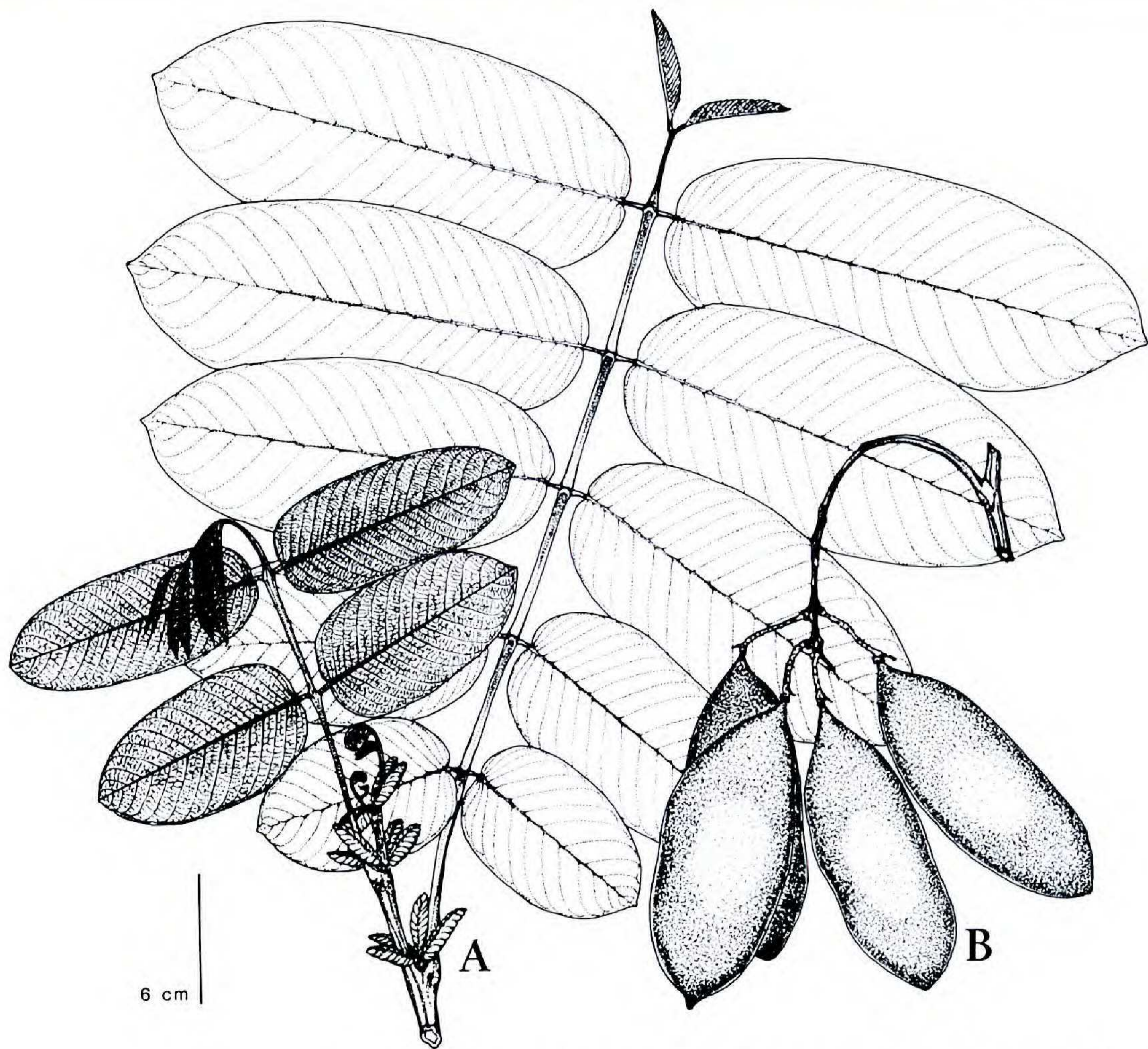


FIG. 1. *Tachigali vasquezii* Pipoly. A. Branchlet, showing the paired stipules and oblong leaflets with truncate bases. B. Infructescence, showing fruits. Drawn from holotype.

1990 (ster.), R. Vásquez & N. Jaramillo 15634 (AMAZ, MO, USM). Madre de Dios: Prov. Manu, Parque Nacional Manu, Río Manu, Cocha Cashu Station, 350 m, 23 Nov 1980 (ster.), R. Foster 5830 (F, USM), Pakitza Station, Río Manu, North Trail, 350 m, 20 Nov 1980 (fr), R. Foster 5780 (F, USM), Zone 1, one km N of camp, 11° 56'S, 71° 16'W, 350 m, 22 Dec 1988 (ster.), R. Foster & S. Baldeón 12671 (F, USM). Prov. Tambopata, Tambopata, along Río Tambopata, 12°49'S, 89°18'W, 280 m, 19 Feb 1984 (ster.), A. Gentry *et al.* 45635 (AMAZ, CUZ, MO, USM); Tambopata Tourist Camp, at jct. of Rios Tambopata and La Torre, 12°49'S, 69°43'W, 280 m, 22 July 1985 (ster.), A. Gentry *et al.* 51088 (CUZ, MO, USM), 26 May 1987 (ster.) A. Gentry *et al.* 57661, 30 May 1987 (ster.), A. Gentry *et al.* 57948; Las Piedras, Cusco Amazónico, Permanent Inventory Plot, 12°29'S, 69°03'W, 200 m, 25 Nov 1991 (ster.), M. Timaná & N. Jaramillo 3464 (CUZ, MO, MOL, USM), 31 Oct 1991 (ster.), M. Timaná & N. Jaramillo 2934 (CUZ, MO, MOL, USM); 18 Jun 1989 (ster.), O. Phillips *et al.* 412 (CUZ, MO), 21 Jun 1989 (ster.), O. Phillips *et al.* 553 (CUZ, MO, USM). Pasco: Prov. Oxapampa, Valle del Palcazu, Iscozacín, camino a Villa America, 400 m, 8 Aug 1981 (ster.), R. Foster 4688 (F, USM); PEPP Arboretum, 09° 50'-10°45'S, 68° 00'-68° 30'W, 300-600 m, (ster.), G. Hartshorn, J. Quijano & E. Meza 2871 (CR, F, US, USM); Palcazu, Río Alto Iscozacín, Ozuz to Río Lobo, 10° 19'S, 75°16'W, 10 May 1985 (fr), R. Foster & B. d'Achille 10070 (F, USM).

Common name.—“chaira paca amarilla” (Peru).

Distribution. Throughout the western Amazon Basin, from near Leticia, Colombia, south and westward through the departments of Loreto, Amazonas and Pasco, to Madre de Dios, Peru, at 150–600 m elevation. In addition, reported to be common in the departments of Pando, Northern La Paz, and Beni, Bolivia (R. Foster- pers. comm.).

Ecology.—Common in the canopies of humid forests, on mostly old alluvial clays, especially sandy clays, or rarely, sands. *T. vasquezii* is frequently encountered on non-inundated terraces of old floodplains and low hilltops and slopes of the Upper Amazon and Andean foothills. Quantitative forest inventories containing permanent plots, established near Leticia, Iquitos and Cusco Amazónico have shown that 3–5 individuals of *T. vasquezii* may be found per hectare, sometimes clumped. Other data from those plots have revealed that *T. vasquezii* regularly grows in the same habitat as *T. ptychophysca* Spruce ex Bentham, but the two do not grow in close proximity. According to Robin Foster (pers. comm.), this species is monocarpic—individuals flowering once and then dying slowly as the seeds mature. The behavior is similar to that described for *T. versicolor* (Foster 1977), except there seems to be greater frequency of individuals in which only a part of the tree flowers and dies within a given year.

Etymology.—This species is dedicated to Rodolfo Vásquez Martínez, friend, colleague and director of the Peruvian exploration project for the Missouri Botanical Garden. He is principal author of the *Florula of the Biological Reserves of Iquitos*, containing nearly 3,000 species. He is also an authority on the systematics of the Hypericaceae, Ebenaceae and Myrsiticaceae of Peru, and the genus *Caraipa* (Clusiaceae) throughout its range.

The angulate branchlets, coriaceous leaves with acuminate apices and truncate bases, concomitant with the bifoliolate, ovate and coriaceous stipules, indicate that *Tachigali vasquezii* is most closely related to the vicariant *T. rugosa* (Martius) Pipoly and Zarucchi of the cerrado formations from eastern Brazil. However, *T. vasquezii* is easily recognized by the chocolate tomentum of the branchlets and abaxial leaflet surface, smooth oblong leaflets, and terete, longer petioles. Whether it is coincidence that the recently described *Affonsea* Pipoly and Vasquez, is also most closely related to an eastern Brazilian taxon remains uncertain pending further studies.

NEW COMBINATIONS IN *TACHIGALI*

As was previously mentioned in the introduction, *Tachigali* and *Sclerolobium* cannot be separated (Zarucchi & Herendeen 1993) on any character other than relative position of pistil stipe within the receptacle cup. The plasticity of this character, and lack of any other known character to separate the two groups necessitates the transfer of three species of

Sclerolobium related to, or occurring in florulas now in final preparation, to *Tachigali*.

Tachigali rugosa (Martius) Zarucchi and Pipoly, comb. nov. BASIONYM: *Sclerolobium rugosum* Martius ex Benth in Hooker, J. Bot. 11: 237. 1850. TYPE. BRAZIL. MATO GROSSO: Cuiabá, *da Silva Manso s.n.*, Martius herbarium 1155, (HOLOTYPE: M (not seen); photo at F Neg. 6264).

Tachigali micropetala (Ducke) Zarucchi and Pipoly, comb. nov. BASIONYM: *Sclerolobium micropetalum* Ducke, Bol. Tech., Inst. Agron. Norte Belém. TYPE. BRAZIL. AMAZONAS: Manaus, without date, *Ducke 1219* (syntypes: K, MO, NY).

Tachigali bracteosa (Harms) Zarucchi and Pipoly, comb. nov. BASIONYM: *Sclerolobium bracteosum* Harms, Verhandl. Bot. Ver. Brandenb. 48:168. 1907. TYPE. BRAZIL. AMAZONAS: Rio Marmelos and Rio Madeiras, *Ule 6094* (F- fragment, HBG, photos at K, MO, US).

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